<u>INTERVIEW SUMMARY/REMARKS</u>

In his Final Rejection, Examiner Wood (hereinafter "Examiner") stated:

> Applicant argues the SLED of Ramsey is not an ADL (Architecture Description Language). Examiner disagrees, SLED is an ADL. Applicant states the SLED is functionally *inverse* to an ADL (page 8, last paragraph). However, an ADL is a <u>language</u> (general representation), which describes hardware (specific). SLED is also a way to use a general construction to describe hardware (Ramsey, abstract, line 6, "SLED is suitable for describing both CISC and RISC machines ..."). Furthermore, Applicant indicates and ADL is often used in construction other applications (11 March 2003 Amendment: page 7, fourth quoted paragraph and last paragraph). SLED is also used in aiding other applications, which may process machine code (Ramsey, Abstract, lines 2-4). SLED and ADL are both high-levels of abstraction than the actual machine code.

Examiner's Final Office Action p. 12 (04 June 2003).

On or around June 26, 2003, an attorney of record, Dale Cook, spoke via teleconference with the Examiner regarding Applicant's Response of March 5, 2003. Mr. Cook related that SLED did not constitute an ADL *as defined in Applicant's application and as claimed.* Applicant also related that he understood Examiner's position related to his view of an ADL in a global sense, since such term does not currently appear to have a generally accepted meaning in the art. In response to the foregoing, the Examiner suggested that Applicant's amend Independent Claims 1, 4, and 9 to make this distinction more apparent.

In response to the Examiner, Applicant has herein amended Independent Claims 1, 4, and 9 to make more apparent the distinctions over the prior art also painted out as in the previous Response. Specifically, Applicant has herein amended Independent Claim 1 to recite "repeating said generating step for each line in said opcode summary table, resulting in an ADL representation of the opcode summary table such that the ADL representation generates a representation of structure." Applicant has herein amended Independent Claim 4 to recite "generating root code for the hierarchy in architecture description language format based on said grouping, wherein the root code in architecture description language generates a representation of structure." Applicant has herein amended Claim 9 to recite "a third computer code section for generating an encoded representation of said grouping, wherein the encoded representation of

said grouping includes an Architecture Description Language representation that generates a representation of structure."

In his previous response, Applicant quoted extensively from his application in relation to the term ADL, and such quotation provides support for the "representation of structure" claim amendments. For example, Applicant quoted the following from pages 3 and 4 of his application:

> The power of an ADL lies in the fact that, using an ADL description of a microprocessor, one can automatically create various programming tools for that processor. In order to create, for example, an assembler for a microprocessor, one may write a program in *ADL that describes the microprocessor. Then, an assembler generator could be used to create an assembler from the ADL description of the microprocessor. In order to create a simulator, one would also need to input the behavior of each instruction into the ADL description into the simulator generator.*
>
> . . .
>
> *After the programming tools are created, the new microprocessor is tested.* Once tested, the design may be improved in various ways, including modifying the instruction set. Once the product is improved, new programming tools must be created, which results in additional delays associated with the re-coding of the ADL. Furthermore, the ADL code must be debugged before it can reliably be used to test the microprocessor.

(emphasis added). Applicant does not re-quote all material quoted in the previous Response herein for sake of brevity. Applicant respectfully asserts that one having ordinary skill in the art will appreciate that a shorthand notation for the quoted material is that Applicant's ADL is used to produce a "representation of structure." Applicant respectfully asserts that the foregoing identified amendments to Claims 1, 4, and 9 more clearly point out that Applicant's ADL generates a representation of structure. In addition, Applicant has also herein added dependent claims 13, 14, and 15 which further define Applicant's ADL representation of structure.

As was implicitly noted in Applicant's previous response, SLED does not generate a representation of structure. Specifically, Applicant directs the Examiner's attention to Table 1 of *Architecture Description Languages for Retargetable Compilation*, W. Qin and S.

Malik (copy submitted with enclosed IDS),[1] which clearly shows that SLED does not generate a representation of structure:

	MIMOLA	UDL/I	nML	ISDL	SLED/λ-RTL	Maril	HMDES	TDL
category	HDL	HDL	behavioral	behavioral	behavioral	mixed	mixed	mixed
compiler	MSSQ, Record	COACH	CBC, CHESS	Aviv	vpo	Marion	IMPACT	PROPAN
simulator	MSSB/U	COACH	Sign/Sim, Checkers	GENSIM				
behavioral representation	RT-level	RT-level	RT-lists	RT-lists	RT-lists	RT-lists		RT-lists
hierarchical behavioral representation			yes	yes	yes	no	yes	yes
structural representation	netlist	netlist				resource	resource	resource
ILP compiler support	yes	yes	(yes)	(yes)	no	no	(yes)	no
control path	yes	yes	no	no	no	no	no	no
constraint model				Boolean		resource	resource	resource, Boolean
other features							pre-processing support	pre-processing support

Insofar as Applicant's ADL generates a representation of structure, and insofar as SLED does not, Applicant respectfully asks that the Examiner hold Independent Claims 1, 4, and 9 allowable over the art of record.

Dependent Claims 2, 3, and 13-15 depend from Independent Claim 1. Dependent Claims 5-8 depend from Independent Claim 4. Accordingly, Applicant respectfully asks that the Examiner hold Dependent Claims 2-3, 13-15, and 5-8 allowable over the art of record for at least the reasons of such dependencies.

<u>Claims 10, 11, and 12</u>

Further during the teleconference, the undersigned related that Applicant respectfully disagreed with the Examiner's reasoning related to Applicant's Claims 10, 11, and 12. Specifically, Applicant related that he objected to Examiner's assertions that the "sub-

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[1] Applicant does not know the publication date of this article, but insofar as that the article cites references from 2001, Applicant believes this article does not constitute prior art.

group" and/or "super group" related claim recitations of Claims 10, 11, and 12 were obvious. Examiner suggested that Applicant also address this respectful disagreement in this Amendment After Final.

Applicant has carefully reviewed the Examiner's Office Action. The Examiner's comments with respect to Claim 10 are instructive:

> Ramsey demonstrated that it was known at the time of the invention to provide opcode summary tables for a processor (page 497, bracket 5). *Ramsey demonstrated that it was known at the time of invention to develop hierarchies of tables and provide groupings and patterns* (Ramsey by page 497, bracket 5's *mention of hierarchy of tables* and page 499, bracket 9's *groupings and implicit patterns*). *It would have been obvious to one of ordinary skill in the art at the time of invention to implement Hanono's system of generating an ISDL model via CAD with the ability to read an opcode table and analyze super groups (or subgroups for that matter, both deriving from hierarchies of instruction tables) to generate the code as found in Ramsey's teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to provide a system, which reduces the effort required by a programmer or developer. Additionally, a super or sub grouping of opcodes provides an efficient manner in which to display or organize a large group of information, which has varying degrees of similarity.*

Examiner's Final Office Action pp. 09-10 (04 June 2003) (emphasis added).

Assuming *arguendo* that the Examiner's assertions regarding the teaching of Ramsey are correct, Applicant respectfully points out that the Examiner has pointed to no objective evidence of a teaching to go from any hierarchies of Ramsey to the sub-group and/or super group recitations of Applicant's claims.

Applicant respectfully points out that, in the absence of Applicant's application, there is no objective teaching to go from any hierarchies of Ramsey to the sub-group and/or super group recitations of Applicant's claims. Accordingly, at present it appears that the Examiner's conclusion of obviousness is the result of impermissible hindsight, and thus Applicant respectfully asks that the Examiner withdraw his obviousness rejections of Independent Claims 10, 11, and 12 for at least the foregoing reasons.

35 U.S.C. § 112 Rejections

The Examiner has rejected Claim 11 under 35 U.S.C. § 112 "for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: details concerning the output files." *Examiner's Final Office Action* p. 2 (04 June 2003). Examiner has cited MPEP § 2172.01, which bears quoting at length:

> In addition, a claim which fails to interrelate essential elements of the invention as defined by applicant(s) in the specification may be rejected under 35 U.S.C. 112, second paragraph, for failure to point out and distinctly claim the invention. See *In re Venezia*, 530 F.2d 956, 189 USPQ 149 (CCPA 1976); *In re Collier*, 397 F.2d 1003, 158 USPQ 266 (CCPA 1968). >But see *Ex parte Nolden*, 149 USPQ 378, 380 (Bd. Pat. App. 1965) ("**[I]t is not essential to a patentable combination that there be interdependency between the elements of the claimed device or that all the elements operate concurrently toward the desired result**"); *Ex parte Huber*, 148 USPQ 447, 448-49 (Bd. Pat. App. 1965) (**A claim does not necessarily fail to comply with 35 U.S.C. 112, second paragraph where the various elements do not function simultaneously, are not directly functionally related, do not directly intercooperate, and/or serve independent purposes.**).<

Thus, to reject a claim under the guidance of MPEP § 2172.01 requires that the Examiner establish, in sequence, two things. First, that the "**claim ... omits matter disclosed to be essential to the invention as described in the specification or in other statements of record.**" Second, that the "matter disclosed to be essential to the invention as described in the specification or in other statements of record" is missing from the claim.

With respect to Claim 11, the Examiner has failed to point to any evidence that the details of the use of output files are essential. In addition, Applicant points out that in at least two places in the detailed description, he has shown that the *details* related to the output files are *not* essential. *See Applicant's Application* pages 6 and 16-17. Accordingly, Examiner's rejection of Claim 11 is improper, and Applicant respectfully asks Examiner to withdraw that rejection for at least the foregoing reasons.

35 U.S.C. § 101 Rejections

The Examiner has rejected Claim 12 under 35 U.S.C. 101. The Examiner has stated that "suggested corrections include embodying the computer program on a computer readable media." In response to the Examiner, the Applicant has amended Claim 12.

Conclusion

Overall, the cited references do not singly, or in any motivated combination and/or modification, teach or suggest the claimed features of the embodiments recited in claims 1-15, and thus such claims are allowable. If the undersigned attorney has overlooked a relevant teaching in any of the references, the Examiner is requested to point out specifically where such teaching may be found. Furthermore, although not expressly set forth herein, Applicant continues to assert all points of his previous Office Action, and no waiver (legal, factual, or otherwise), implicit or explicit, is hereby intended.

In light of the above amendments and remarks, Applicants respectfully submit that all pending claims are allowable. Applicants, therefore, respectfully request that the Examiner reconsider this application and timely allow all pending claims. The Examiner is encouraged to contact Mr. Cook by telephone to discuss the above and any other distinctions between the claims and the applied references, if desired. If the Examiner notes any informalities in the claims, he is encouraged to contact Mr. Cook by telephone to expediently correct such informalities.
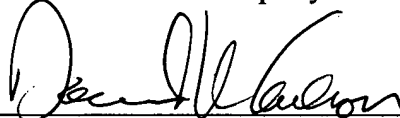
The Commissioner is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

All of the claims remaining in the application are now clearly allowable. Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,

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